

Please replace claims 1-9, 11, 12, 14, 17, 19, and 20 with the following amended claims:

1 1. (As Amended) A pressure-sensitive sensor disposed at at least one of an
2 opening and an opening-closing unit for opening and closing said opening, used
3 for detecting contact of an object and preventing seizure of the object between said
4 opening and said opening-closing unit, said pressure-sensitive sensor comprising:

5 pressure-sensitive means for generating an output signal depending on
6 deformation; and

7 support means for supporting said pressure-sensitive means in at least one
8 of said opening and said opening-closing unit,

9 wherein said support means has a greater flexibility than said pressure-
10 sensitive means.

1 2. (As Amended) The pressure-sensitive sensor of claim 1,

2 wherein said support means includes:

3 a deformation amplifying portion for amplifying the deformation of said
4 pressure-sensitive means.

1 3. (As Amended) The pressure-sensitive sensor of claim 2,

2 wherein said deformation amplifying portion includes:

3 a hollow portion.

1 4. (As Amended) The pressure-sensitive sensor of claim 1,

2 wherein said support means includes:

3 a vibration damping portion for damping vibration.

1 5. (As Amended) The pressure-sensitive sensor of claim 4,

2 wherein said support means includes:

3 a deformation amplifying portion for amplifying the deformation of said
4 pressure-sensitive means,

5 said vibration damping portion serves also as said deformation amplifying
6 portion.

1 6. (As Amended) The pressure-sensitive sensor of claim 1,

2 wherein said support means is formed of a part of a weather strip of an
3 automobile.

1 8. (As Amended) The pressure-sensitive sensor of claim 1, further
2 comprising:

3 plural electrodes for leading out signals; and

4 a resistor for detecting breakage disposed between said electrodes for
5 detecting breakage of said electrodes.

1 9. (As Amended) The pressure-sensitive sensor of claim 1,

2 wherein said pressure-sensitive means is composed of a flexible
3 piezoelectric sensor, and

4 said support means flexibly supports said piezoelectric sensor along a
5 shape of edge of said opening or said opening-closing unit.

1 11. (As Amended) An object detecting device for detecting a contact of an
2 object, and preventing a seizure of the object between an opening and an opening-
3 closing unit for opening and closing said opening, said object detecting device
4 comprising:

5 a pressure-sensitive sensor disposed at at least one of said opening and
6 said opening-closing unit, said pressure-sensitive sensor comprising:

7 pressure-sensitive means for generating an output signal depending on
8 deformation; and

9 support means for supporting said pressure-sensitive means in at least one

10 of said opening and said opening-closing unit, said support means having a greater
11 flexibility than said pressure-sensitive means; and

12 judging means for judging the contact of the object with said pressure-
13 sensitive sensor on the basis of an output signal of said pressure-sensitive sensor.

1 12. (As Amended) The object detecting device of claim 11, further
2 comprising:

3 notice means for informing a third party of a judging result of said judging
4 means.

1 14. (As Amended) The object detecting device of claim 11,
2 wherein said judging means includes:

3 a filter for extracting only a specified frequency component from the
4 output signal of said pressure-sensitive sensor.

1 17. (As Amended) The object detecting device of claim 11,
2 wherein said judging means includes:

3 a signal input unit for feeding the output signal of said pressure-sensitive
4 means;

5 a signal output unit for issuing a judging result of judging the contact of
6 the object to said pressure-sensitive sensor; and

7 a bypass unit for passing high frequency signal through between said
8 signal input unit and said signal output unit.

1 19. (As Amended) An object detecting device for detecting a contact of an
2 object, and preventing a seizure of the object between an opening and an opening-
3 closing unit for opening and closing said opening, said object detecting device
4 comprising:

5 a pressure-sensitive sensor disposed at at least one of said opening and
6 said opening-closing unit, said pressure-sensitive sensor comprising:

7 pressure-sensitive means for generating an output signal depending on
8 deformation, said pressure-sensitive means being composed of a flexible
9 piezoelectric sensor; and

10 support means for supporting said pressure-sensitive means along a shape
11 of an edge of said opening or said opening-closing unit, said support means having
12 a greater flexibility than said pressure-sensitive means;

13 judging means for judging the contact of the object with said pressure-
14 sensitive sensor on the basis of an output signal of said pressure-sensitive sensor;
15 and

16 a discharge unit for discharging an electric charge generated in said
17 piezoelectric sensor disposed in at least one of said piezoelectric sensor and said
18 judging means.

1 20. (As Amended) An opening-closing device having a function for
2 detecting a contact of an object, and preventing a seizure of the object between an
3 opening and an opening-closing unit for opening and closing said opening, said
4 opening-closing device comprising:

5 an object detecting device comprising:

6 a pressure-sensitive sensor disposed at at least one of said opening and
7 said opening-closing unit, said pressure-sensitive sensor comprising:

8 pressure-sensitive means for generating an output signal depending on
9 deformation; and

10 support means for supporting said pressure-sensitive means in at least one
11 of said opening and said opening-closing unit, said support means having a greater
12 flexibility than said pressure-sensitive means; and

13 judging means for judging the contact of the object with said pressure-
14 sensitive sensor on the basis of an output signal of said pressure-sensitive sensor;

15 drive means for driving said opening-closing unit; and

16 control means for controlling said drive means so as to stop closing action
17 of said opening-closing unit or open said opening-closing unit when said judging
18 means judges the contact of the object with said pressure-sensitive sensor when
19 said opening-closing unit is closing.

1 21. (As Amended) The opening-closing device of claim 20,

2 wherein said control means includes:

3 a contact judging unit of said opening-closing unit for judging the contact
4 of the object with said opening-closing unit on the basis of a detected drive state
5 when said contact judging unit detects the drive state when said drive means
6 drives said opening-closing unit; and

7 a controller for controlling said drive means on the basis of an output signal from
8 at least one of said object detecting device and said contact judging unit.

Please add the following new claims:

1 24. (Newly Added) An opening-closing device having a function for
2 detecting a contact of an object, and preventing a seizure of the object between an
3 opening and an opening-closing unit for opening and closing said opening, said
4 opening-closing device comprising:

5 an object detecting device comprising:

6 a pressure-sensitive sensor disposed at at least one of said opening and
7 said opening-closing unit, said pressure-sensitive sensor comprising:

8 pressure-sensitive means for generating an output signal depending on
9 deformation, said pressure-sensitive means being composed of a flexible
10 piezoelectric sensor; and

11 support means for supporting said pressure-sensitive means along a shape
12 of an edge of said opening or said opening-closing unit, said support means having
13 a greater flexibility than said pressure-sensitive means;

14 judging means for judging the contact of the object with said pressure-

15 sensitive sensor on the basis of an output signal of said pressure-sensitive sensor;
16 and

17 a discharge unit for discharging an electric charge generated in said
18 piezoelectric sensor disposed in at least one of said piezoelectric sensor and said
19 judging means;

20 drive means for driving said opening-closing unit; and

21 control means for controlling said drive means so as to stop closing action
22 of said opening-closing unit or open said opening-closing unit when said judging
23 means judges the contact of the object with said pressure-sensitive sensor when
24 said opening-closing unit is closing.

1 25. (Newly Added) The opening-closing device of claim 24,

2 wherein said control means includes:

3 a contact judging unit of said opening-closing unit for judging the contact
4 of the object with said opening-closing unit on the basis of a detected drive state
5 when said contact judging unit detects the drive state when said drive means
6 drives said opening-closing unit; and

7 a controller for controlling said drive means on the basis of an output
8 signal from at least one of said object detecting device and said contact judging
9 unit.

1 26. (Newly Added) The opening-closing device of claim 25,

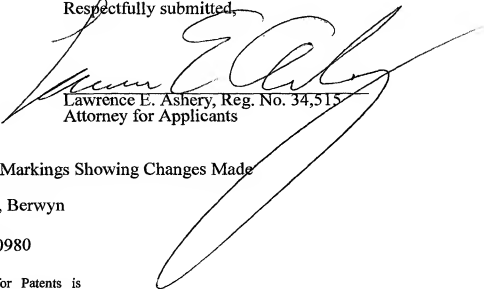
2 wherein said control means controls said drive means on the basis of an
3 output signal of said contact judging unit if abnormality occurs in said object
4 detecting device.

MAT-8183US

- 8 -

- 5 27. (Newly Added) The opening-closing device of claim 24,
6 wherein said control means controls said drive means so as to close after
7 once moving said opening-closing unit by a specific distance in opening direction
8 or opening for a specific time when closing said opening-closing unit.

Respectfully submitted,



Lawrence E. Ashery, Reg. No. 34,515
Attorney for Applicants

LEA/lm

Enclosure: Version With Markings Showing Changes Made

Dated: October 22, 2001

Suite 301, One Westlakes, Berwyn

P.O. Box 980

Valley Forge, PA 19482-0980

(610) 407-0700

The Assistant Commissioner for Patents is
hereby authorized to charge payment to Deposit
Account No. 18-0350 of any fees associated
with this communication.

EXPRESS MAIL Mailing Label Number: EL741592766US

Date of Deposit: October 22, 2001

I hereby certify that this paper and fee are being deposited, under 37 C.F.R. § 1.10 and with sufficient
postage, using the "Express Mail Post Office to Addressee" service of the United States Postal Service on
the date indicated above and that the deposit is addressed to the Assistant Commissioner for Patents,
Washington, D.C. 20231.



Kathleen Libby